Probing surface flows and magnetic fields with time-distance helioseismology

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Time-distance helioseismology, applied to surface gravity waves, has been shown to be a useful tool to study horizontal flows near the solar surface, and supergranulation in particular (Duvall & Gizon, 2000). Here, we present maps of horizontal flows and horizontal magnetic fields, in both quiet and active regions. Travel-time sensitivity kernels based on wave theory, as opposed to ray theory, are used in the inversions.